



The Evolution of NWS Aviation Weather Services in Chicago

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National Weather Service Chicago



Goals

- Improve collaboration among the NWS, FAA, Commercial Airlines, and Airport Operators
 - Disseminate more frequent weather information
 - Increase service to aviation interests
 - Improve service delivery infrastructure
 - Develop improved tools for the forecaster
- These are the keys to managing the impact of weather on the Chicago airspace and reducing weather related flight delays.



Initial Efforts

- 2-hr TAF updates on weekdays
- Improved aviation AFD format
- Increased collaboration between WFO and CWSU
- Hourly updates to wind and POP/Wx grids
- Listen in on FAA/Airline strategic planning telcons; better understand impacts of weather and forecasts

www.weather.gov/zau

[weather.gov](http://www.weather.gov)

Latest Discussion

(EXTRACTED FROM FXUS63 KLOT 151730) .DISCUSSION... 330 AM CST TUE FEB 15 2011 //ORD AND MDW CONCERNS...UPDATED 18Z..

* ADVECTION/DEVELOPMENT OF MVFR OVERNIGHT AND PERSISTENCE INTO WED

TRS //DISCUSSION...UPDATED 18Z..

SSE TO S FLOW IN LOWEST 1KM WILL CONTINUE TO SPREAD HIGHER DEW POINT AIR N INTO THE UPPER MIDWEST THIS EVENING WITH THE EASTERN EDGE OF THIS MOISTURE GRADUALLY CREEPING E OVER THE LOCAL TERMINALS. SHORT WAVE TROUGH OVER THE MID MO VALLEY TO MOVE E AND BE OVER THE LOCAL TERMINALS BY 06Z WED. SUBSIDENCE AND RESULTING WARMING FOLLOWING TROF AS IT PASSES TO THE E WILL SERVE TO STRENGTHEN AND LOWER THE TOP OF THE INVERSION...WITH CIGS RESPONDING BY LOWERING AS LOW LEVEL MOISTURE FEED CONTINUES UP ACROSS THE OZARKS AND THE MID VALLEY AND UP TO THE LOCAL AREA

TRS //ORD AND MDW CONFIDENCE...UPDATED 18Z..

* HIGH IN BASIC TREND OF DETERIORATION OF CIGS AND VSBYS DOWN TO MVFR

* LOW AS TO SPECIFIC TIMING OF LOWERING OVERNIGHT * LOW IN NOT GOING ANY LOWER THAN MVFR

TRS //OUTLOOK FOR ORD/MDW FOR 00Z THURSDAY-12Z TUESDAY...UPDATED 12Z..

WEDNESDAY NIGHT...FOG AND DRIZZLE. LIFR LIKELY. VLIFR POSSIBLE

THURSDAY...LIFR LIFTING TO IFR/POSSIBLY MVFR. STRONG SOUTH WINDS

FRIDAY...STRONG WEST WINDS. VFR

SATURDAY...VFR

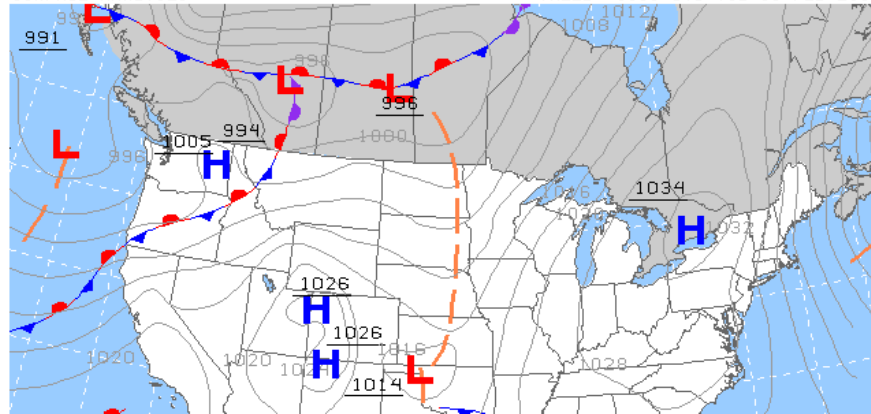
SUNDAY...CHANCE OF RAIN. MVFR POSSIBLE

MONDAY...CHANCE OF RAIN. MVFR LIKELY. IFR POSSIBLE. CMS

Latest Surface Map


SURFACE ANALYSIS

VALID: 1500 UTC TUE 15 FEB 2011




- Dev
- Airs
- Dev
- Aids

www.weather.gov/zau



National Weather Service
Chicago
Center Weather Service Unit



Home Site Map News Organization Search for: ☒ NWS ☐ All NOAA Go

Local forecast by
"City, St" or Zip Code

City, St Go

XML RSS Feeds

Advisories

- CWA & MIS
- AIRMET/SIGMET
- Graphical AIRMET

Forecasts

- Local Forecast Graph
- AWC CCFP
- AWC NCWF
- LAMP-CCFP Hybrid
- Get Any TAF
- Get Wind Profile
- Aviation Discussions
- ORD Precip Outlook

Observations

- PIREP Plot Map
- METAR Plot Map
- Icing Analysis
- Turbc Analysis
- National Radar
- Select a Radar
- FAA RVR Data

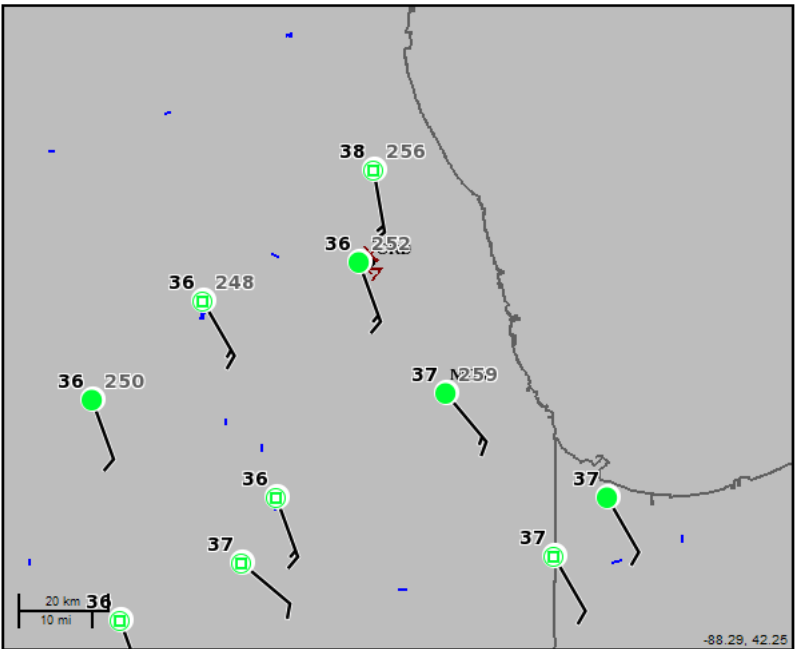
Important Links

- AWC Home Page
- ADDS Home Page
- SPC Home Page
- HPC Home Page
- CWSU Mobile
- CWSU Map
- NWS Forecast Offices
- Space Weather
- NCAR/RAP
- NWS Chicago

FAA Info

- FAA Home Page
- Flight Delays
- NAS Status

Chicago Area Critical Tail Wind Display



Map showing Chicago area critical tail wind display. Aircraft icons are labeled with numbers (36, 37, 38) and wind vectors. A scale bar indicates 20 km and 10 mi. Coordinates -88.29, 42.25 are shown at the bottom right.

Current Configuration
West Flow

Switch Tailwind Configuration

Page Last Updated
18:30Z

Forecast Last Updated
18:01Z

View Terminal Forecasts

ORD

19Z 170/10	20Z 170/10	21Z 170/10
22Z 170/11	23Z 170/12	00Z 180/13

MDW

[Aviation Weather Center](#) | [NWS Center Weather Units](#) | [NWS Forecast Offices](#)

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National Weather Service Chicago Center Weather Service Unit

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Local forecast by
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Advisories

ZAU CWA/MIS
AIRMET/SIGMET
Graphical AIRMET
TDA Dashboard

Forecasts

TDA - Convection
TDA - Tail Wind
CHI Fcst - Graph
AWC CCFP
AWC NCWF
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Svr Wx Dashboard

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Select a Radar
Satellite Imagery

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SPC Home Page
CWSU Mobile
CWSU Map
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NAS Status

Chicago Area Convective TDA

Departure Gates

NORTH

10Z	11Z	12Z
13Z	14Z	15Z

SOUTH

10Z	11Z	12Z
13Z	14Z	15Z

EAST

10Z	11Z	12Z
13Z	14Z	15Z

WEST

10Z	11Z	12Z
13Z	14Z	15Z

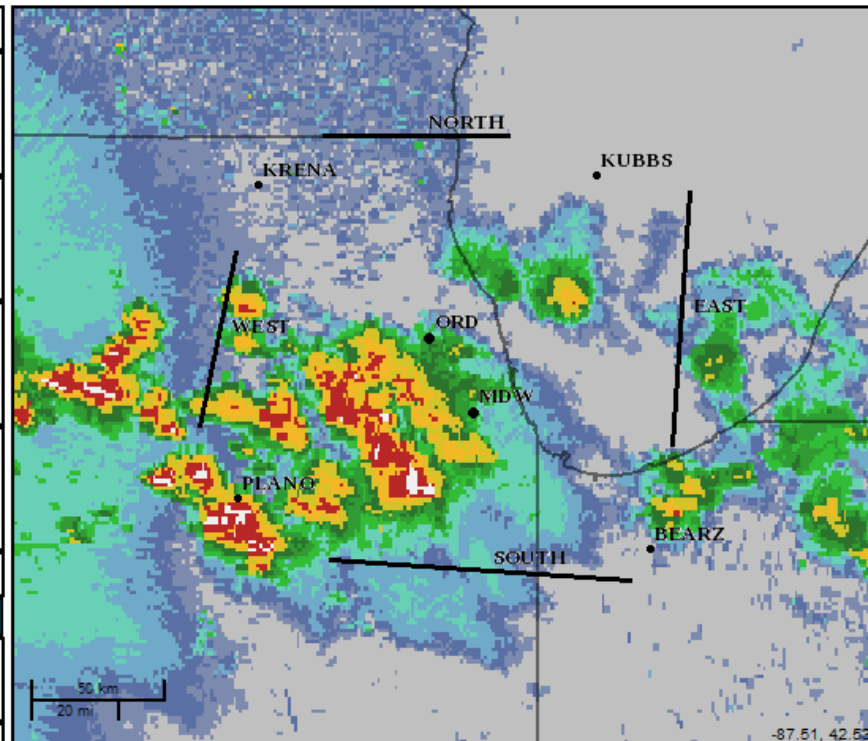
[Click For Echo Tops](#)

[Click For CCFP](#)

Forecast Last
Updated
09:01Z

Page Last
Updated
09:12Z

Radar Image Time
08:40Z



Arrival Gates

PLANO

10Z	11Z	12Z
13Z	14Z	15Z

KUBBS

10Z	11Z	12Z
13Z	14Z	15Z

BEARZ


10Z	11Z	12Z
13Z	14Z	15Z

KRENA

10Z	11Z	12Z
13Z	14Z	15Z

T-storm Prob

None
Slight Chance
Chance
Likely
Definite



Resources

- Addition of 3 forecasters
 - cross trained as WFO and CWSU forecasters
 - allow a dedicated Aviation Desk 24 hrs a day/5 days a week
- Addition of Aviation Services Improvement Meteorologist
 - allows for more interaction with customers and expansion of new services

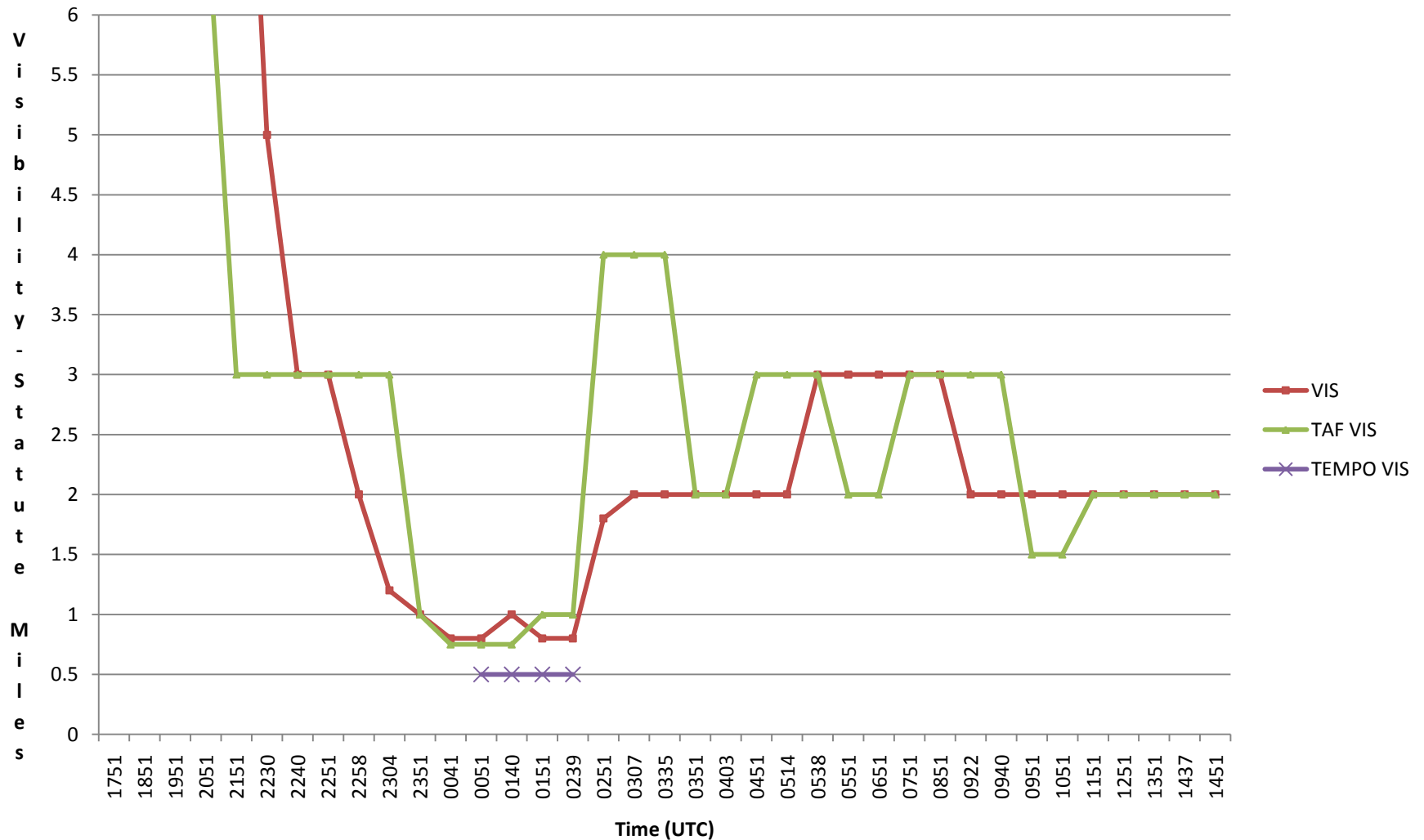


Evolution

- Development of WFO/CWSU Aviation Team
 - integrate Science and Service aspects
 - build relationships and communication with customers
 - assess initial service enhancements
 - develop/implement new service improvements
 - analyze significant aviation weather events to better understand impacts and build forecaster knowledge base
 - *Develop training for the user community*

Event Reviews

Visibility 12/20-21/2010

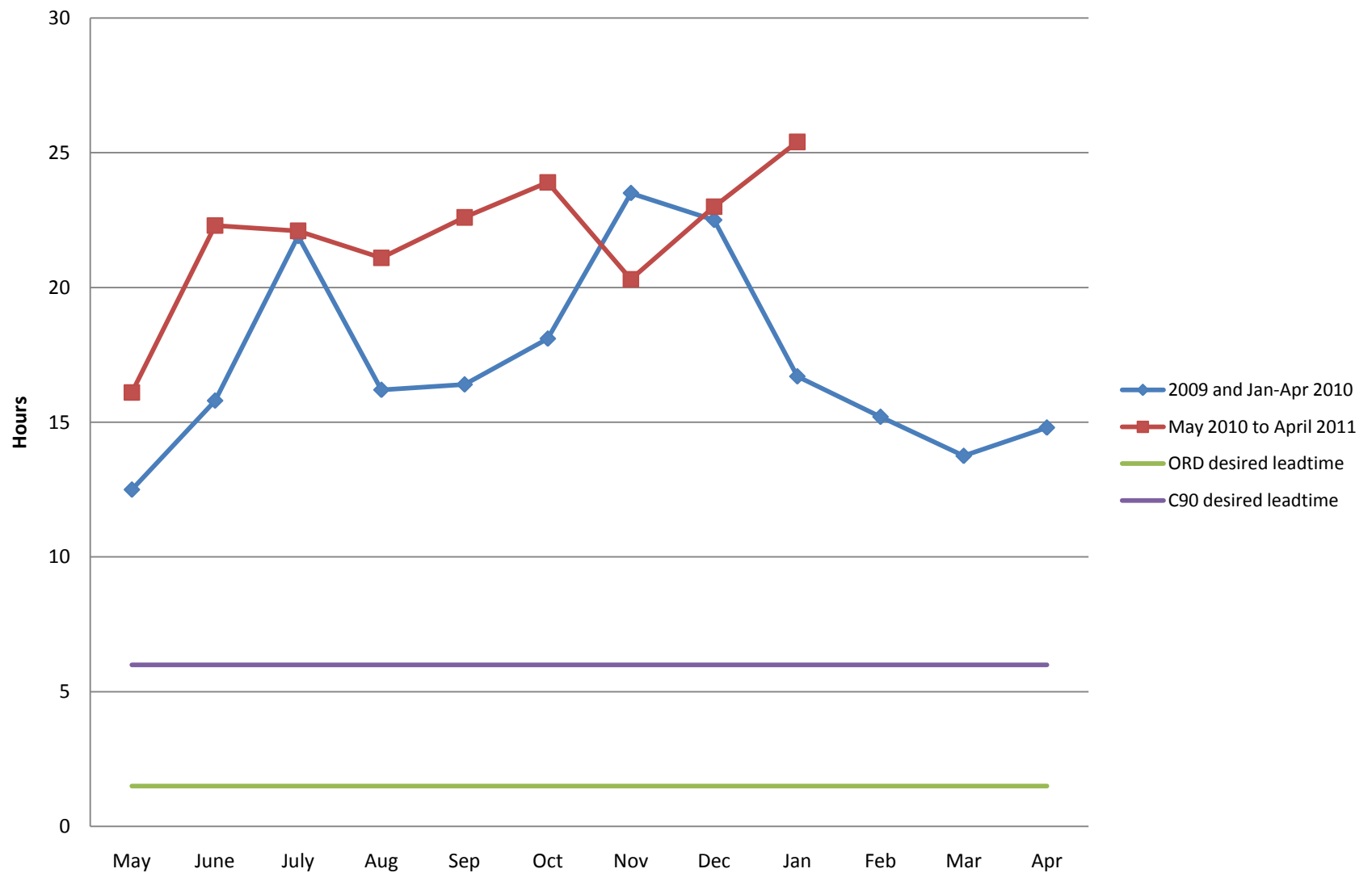




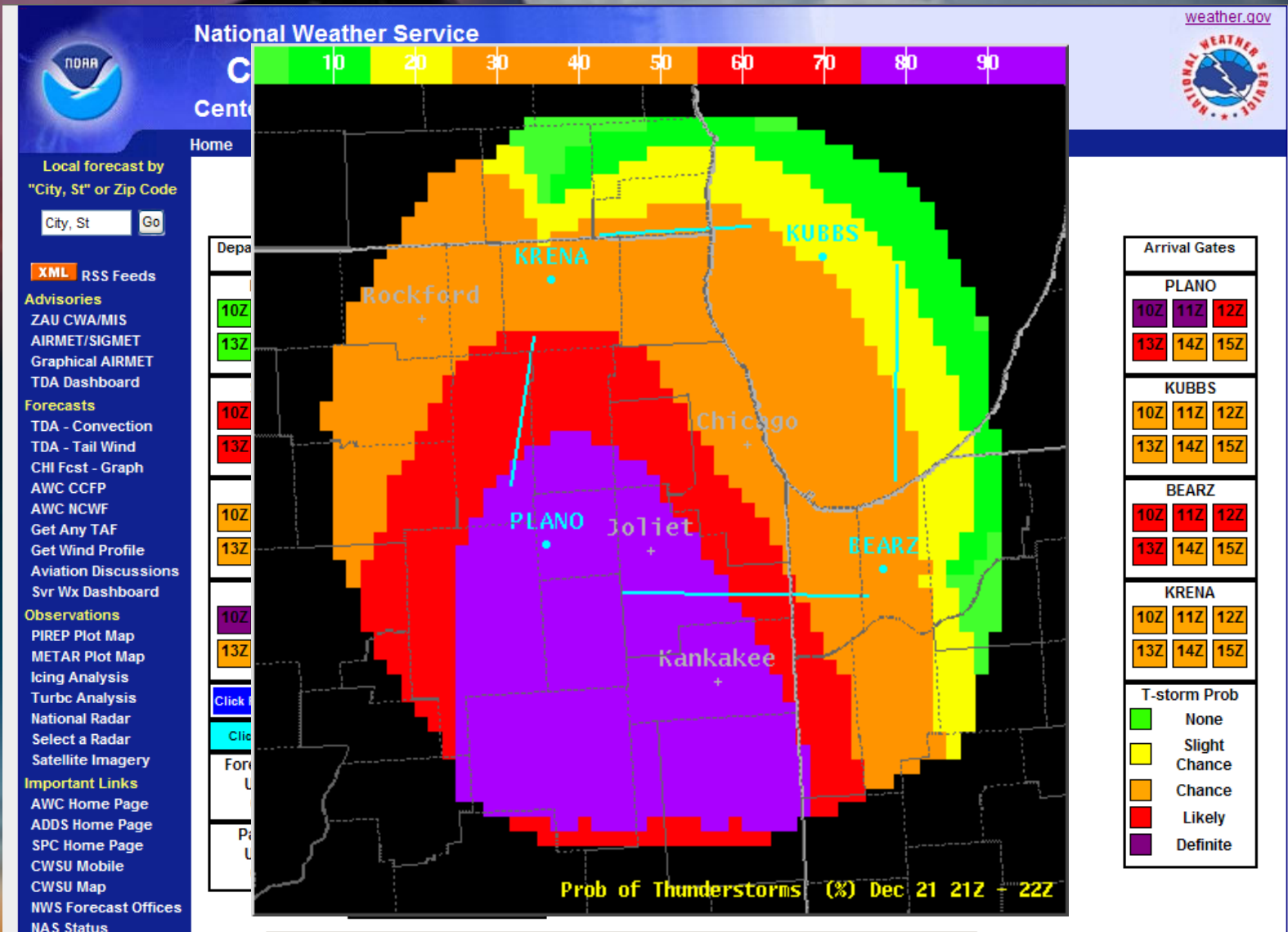
Evaluation

- Traditional
 - POD, FAR, CSI
 - Measures forecast against forecast models
- We need to measure the IMPACT of our services
 - Wind shift lead time
 - Weather related delays
 - Multiple causes even when attributed to wx
 - Some delays are inevitable
- Ideas?

ORD wind shift lead time



Evolution – TS TDA



Evo

W

- Develop
- winter op
- Produce

NZUS99 KLOT 011652
WRKAWP

EXPERIMENTAL AIRPORT WINTER PRECIPITATION OUTLOOK FOR O'HARE
NATIONAL WEATHER SERVICE CHICAGO IL
1052 AM CST TUE FEB 1 2011

TIME CST	13	14	15	16	17	18	19	20	21	22	23	00
TIME UTC	19	20	21	22	23	00	01	02	03	04	05	06
% CHC ACCUM												
SNOW OR ICE	80	80	80	100	100	100	100	100	100	100	100	10
SNOW TYPE	AVG	AVG	AVG	AVG	AVG	AVG	AVG	AVG	AVG	AVG	AVG	AV
ACCUM RATE	<.25	<.25	.2-.5	.2-.5	.5-.8	~1.0	>1.0	>1.0	>1.0	>1.0	>1.0	>1
MIX PRECIP?	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/
TEMP (F)	24	25	25	25	24	23	22	21	20	19	19	18
WIND DIR	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
WIND SPD	23	24	25	26	27	28	28	29	31	31	31	32
WIND GUST	32	34	36	39	41	43	44	47	48	50	51	51

REMARKS...LIGHT SNOW WILL CONTINUE UNTIL MID AFTERNOON WITH A FEW TENTHS OF ACCUMULATION POSSIBLE. HEAVIER SNOW WILL ARRIVE SOMETIME AFTER THE 19-21Z TIME FRAME WITH ACCUMULATION RATES QUICKLY INCREASING. THE HEAVIEST SNOWFALL IS EXPECTED FROM AROUND 01Z UNTIL AROUND 10Z WHEN 2-3 IN/HR IS POSSIBLE WHICH WILL COINCIDE WITH THE STRONGEST WIND GUSTS WHICH COULD EXCEED 45 KT AT TIMES. THE COMBINATION OF EXTREMELY HEAVY SNOWFALL AND STRONG WINDS WILL PUSH VISIBILITY TO ZERO AT TIMES. SIGNIFICANT DRIFTING SNOW IS EXPECTED.

&&

.EXTENDED OUTLOOK...06Z WEDNESDAY THROUGH 00Z THURSDAY...

* ACCUMULATING START TIME...ONGOING AT 06Z.

* PRECIP TYPE...SNOW.

* ACCUMULATION RATES...2-3 IN/HR CONTINUING UNTIL AROUND 10Z THEN DECREASING BUT LIKELY REMAINING GREATER THAN 1 IN/HR THROUGH WEDNESDAY MORNING.

* STORM TOTAL ACCUMULATION...17-20 INCHES.

* ACCUMULATING END TIME...BY AROUND 18Z...WITH LIGHT SNOW INTO EARLY AFTERNOON. BLOWING AND DRIFTING SNOW WILL CONTINUE.

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Evolution

- Improved Airspace-specific Support
 - ARTCC
 - TRACON
 - ORD/MDW Towers
- Enhanced ZAU Web page
- Improved communication/coordination
 - NWSSChat??



Top News of the Day

- Top Weather Events of 2010
- Multimedia Weather Briefing
- Winter Weather Briefing
- Additional News Headlines

Local forecast by
"City, St" or Zip CodeCity, St Go

XML RSS Feeds

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AIRMET/SIGMET
Graphical AIRMET

Forecasts

Local Forecast Graph
AWC CCFP
AWC NCWF
LAMP-CCFP Hybrid
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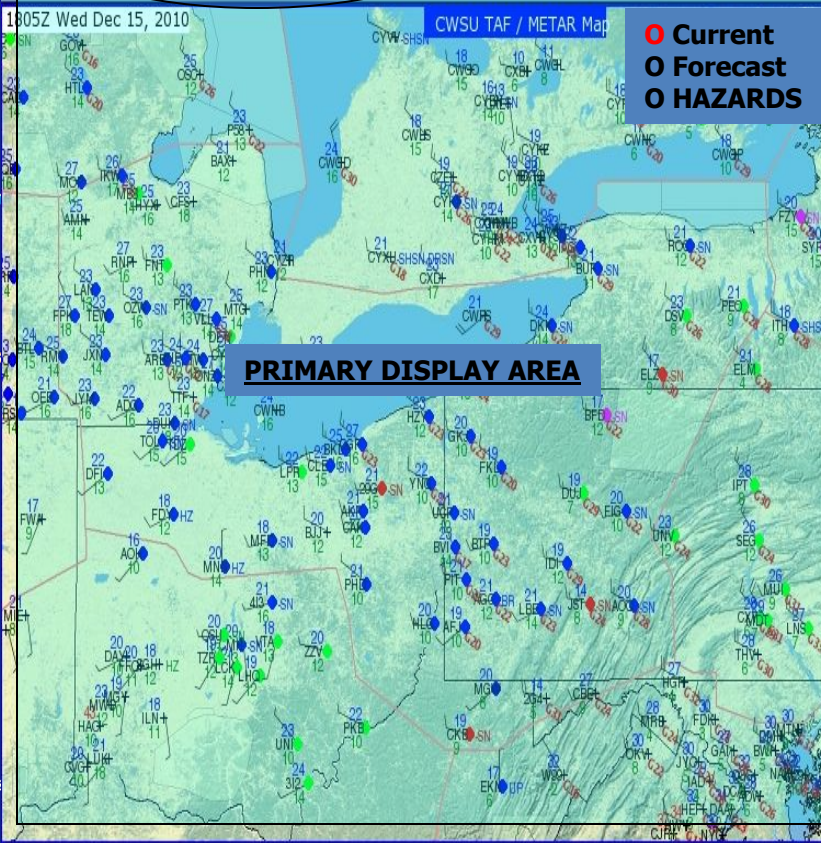
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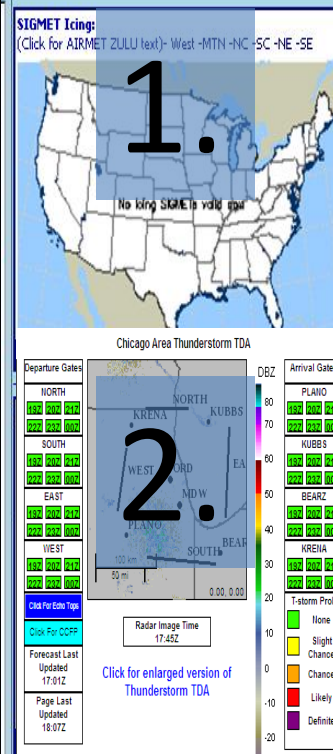
FAA Info

FAA Home Page
Flight Delays
NAS Status



FLIGHT CATEGORY	LIFR	IFR	MVFR	VFR	MISSING OR INCOMPLETE
SYMBOL					

Choose a location and click for TAF
Tactical Decision Aid (TDA)Click Icon for
Situational Awareness Display

Get TAF TDA


Evolution - NextGen

- Next Generation Air Traffic System
- 4-D Cube of data
- Additional gridded weather forecast elements
 - Ceilings
 - Visibility
 - Guidance for areas beyond TAF sites



Questions??

